

I Claim:

1. A digital video conversion system comprising:
a chassis having a plurality of outputs, each output being adapted to provide a
5 decrypted television signal for delivery to an individual television set;
a plurality of converter chains housed within said chassis, each chain including at least
a tuner and a demodulator;
at least one conditional access unit, housed within said chassis, connected to said
plurality of converter chains and having an authorization input, for decrypting digital
10 demodulated signals from said plurality of converter chains upon receiving an authorized
input through the authorization input; and
at least one remote control receiver unit, housed within said chassis, responsive to
commands from individual remote controls associated with the individual television sets for
controlling said converter chains and said at least one conditional access unit.
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2. The digital video conversion system of claim 1 wherein said at least one
conditional access unit comprises only a single conditional access unit connected to said
plurality of converter chains.
- 20 3. The digital video conversion system of claim 2 wherein the authorized input
for enabling said single conditional access unit with respect to demodulated signals from any
of the converter chains comprises a single smartcard.
4. The digital video conversion system of claim 2 wherein said at least one
25 remote control receiver unit is a single RF remote control receiver responsive to any of the
individual remote controls.
5. The digital video conversion system of claim 1 wherein each of said converter
chains further includes a decompression unit for receiving decrypted signals from said at least

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one conditional access unit and an RF modulator coupled between the decompression unit and one of the outputs.

6. The digital video conversion system of claim 1 wherein the tuner and the demodulator of at least one of the converter chains are each housed in individual modular units that can be plugged into said chassis.

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7. A digital video conversion system connected to a cable drop, said system comprising:

10 a splitter connected to said cable drop for simultaneously generating a plurality of frequency division multiplexed 6 MHZ QAM signals;

a plurality of converter chains, each chain including at least a tuner and a demodulator for receiving one of the frequency division multiplexed 6 MHZ QAM signals;

15 a single conditional access unit, connected to said plurality of converter chains and having an authorization input, for decrypting demodulated QAM signals from said plurality of converter chains upon receiving an authorized input through the authorization input and said single conditional access unit individually outputting a plurality of decrypted signals simultaneously, each decrypted signal being associated with one of a plurality of individual television sets; and

20 at least one remote control receiver unit responsive to commands from individual remote controls associated with the individual television sets for controlling said converter chains and said single conditional access unit.

25 8. The digital video conversion system of claim 7 wherein the authorized input for enabling said single conditional access unit with respect to demodulated QAM signals from any of the converter chains comprises a single smartcard.

9. The digital video conversion system of claim 7 wherein said at least one

remote control receiver unit is a single RF remote control receiver responsive to any of the individual remote controls.

10. The digital video conversion system of claim 7 wherein each of said converter
5 chains further includes a decompression unit for receiving one of the decrypted signals from
said single conditional access unit and an RF modulator coupled between the decompression
unit and a connection to one of the individual television sets.

11. The digital video conversion system of claim 7 wherein each individual
10 television set is associated with one of the converter chains and each converter chain
performs the functions of:
tuning to a selected frequency division multiplexed, digitally modulated QAM video
signal;
demodulating the selected digitally modulated QAM video signal;
15 providing the demodulated video signal to said single conditional access unit;
decompressing the decrypted signal from said single conditional access unit; and
modulating the decompressed video signal into an analog video signal for viewing on
the associated individual television set.

12. The digital video conversion system of claim 7 further comprising a main
20 conversion box chassis which houses said splitter, said converter chains, said single
conditional access unit and said at least one remote control receiver unit and wherein the
tuner and the demodulator of at least one of the converter chains are each housed in
individual modular units that can be plugged into the main conversion box chassis.

13. The digital video conversion system of claim 7 wherein each individual
television set is associated with one of the converter chains and each converter chain
performs the functions of:

tuning to a selected frequency division multiplexed, digitally modulated QAM video

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signal;

demodulating the selected digitally modulated QAM video signal;

providing the demodulated video signal to said single conditional access unit; and

outputting the decrypted signal from said single conditional access unit to the

5 individual television set.

14. A digital video conversion system connected to a television signal source, said system comprising:

10 a splitter connected to said signal source for simultaneously generating a plurality of copies of television signals received from said signal source;

a plurality of converter chains, each chain connected to receive one of the copies of the television signals and including at least a tuner for tuning to a selected digitally modulated video channel and a demodulator for demodulating digital video data on the selected video channel;

15 a single conditional access unit, connected to said plurality of converter chains and having an authorization input, for decrypting the demodulated digital video data from said plurality of converter chains upon receiving an authorized input through the authorization input and said single conditional access unit individually outputting a plurality of decrypted baseband video signals simultaneously, each decrypted baseband video signal being
20 associated with one of a plurality of individual television sets; and

at least one remote control receiver unit responsive to commands from individual remote controls associated with the individual television sets for controlling said converter chains and said single conditional access unit.

25 15. The digital video conversion system of claim 14 wherein said signal source comprises an LNB of a satellite antenna and the television signals provided by said signal source comprise L-band frequency division multiplexed digitally modulated channels.

16. The digital video conversion system of claim 14 wherein the authorized input

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for enabling said single conditional access unit to decrypt demodulated digital video data comprises a smartcard.

17. The digital video conversion system of claim 14 wherein said at least one
5 remote control receiver unit is a single RF remote control receiver responsive to any of the individual remote controls.

18. The digital video conversion system of claim 14 wherein each of said
converter chains further includes a decompression unit for receiving one of the decrypted
10 baseband video signals from said single conditional access unit and an RF modulator coupled between the decompression unit and a connection to one of the individual television sets.

19. The digital video conversion system of claim 14 wherein each individual
television set is associated with one of the converter chains and each converter chain
15 performs the functions of:
tuning to a selected digitally modulated video channel;
demodulating digital video data on the selected video channel;
providing the demodulated digital video data to said single conditional access unit;
decompressing the decrypted baseband video signal from said single conditional
20 access unit; and
modulating the decompressed baseband video signal into an analog video signal for
viewing on the associated individual television set.

20. The digital video conversion system of claim 14 further comprising a main
25 conversion box chassis which houses said splitter, said converter chains, said single conditional access unit and said at least one remote control receiver unit and wherein the tuner and the demodulator of at least one of the converter chains are each housed in individual modular units that can be plugged into the main conversion box chassis.

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21. The digital video conversion system of claim 14 wherein each individual television set is associated with one of the converter chains and each converter chain performs the functions of:

- tuning to a selected digitally modulated video channel;
- 5 demodulating digital video data on the selected video channel;
- providing the demodulated digital video data to said single conditional access unit;
- and
- outputting the decrypted baseband video signal from said single conditional access unit to the individual television set.

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22. A digital video conversion system comprising:

a chassis having a plurality of outputs, each output being adapted to provide a decrypted television signal;

- a plurality of converter chains within the chassis, each chain including at least a tuner
- 15 and a demodulator;

at least one conditional access unit, housed within the chassis, connected to the plurality of converter chains and having an authorization input, for decrypting digital demodulated signals from the plurality of converter chains upon receiving an authorized input through the authorization input; and

- 20 at least one remote control receiver unit, housed within the chassis, responsive to commands from at least one individual remote control, the at least one individual remote control controlling the at least one conditional access unit and at least one of the converter chains.

- 25 23. The digital video conversion system of claim 22 wherein the at least one conditional access unit comprises only a single conditional access unit connected to the plurality of converter chains.

24. The digital video conversion system of claim 23 wherein the authorized input for

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enabling the single conditional access unit with respect to demodulated signals from any of the converter chains comprises a single smartcard.

25. The digital video conversion system of claim 23 wherein the at least one remote control receiver unit is a single RF remote control receiver responsive to the at least one individual remote control.

26. The digital video conversion system of claim 22 wherein each of the converter chains further includes a decompression unit for receiving decrypted signals from the at least one conditional access unit, and an RF modulator coupled between the decompression unit and one of the outputs.

27. The digital video conversion system of claim 22 wherein the tuner and the demodulator of at least one of the converter chains are each housed in individual modular units that can be plugged into the chassis.

28. A digital video conversion system connected to a cable drop, the system comprising:
a splitter connected to the cable drop for simultaneously generating a plurality of frequency division multiplexed 6 MHZ QAM signals;
a plurality of converter chains, each chain including at least a tuner and a demodulator for receiving one of the frequency division multiplexed 6 MHZ QAM signals;
a single conditional access unit, connected to the plurality of converter chains and having an authorization input, for decrypting demodulated QAM signals from the plurality of converter chains upon receiving an authorized input through the authorization input and the single conditional access unit individually outputting a plurality of decrypted signals simultaneously; and
at least one remote control receiver unit responsive to commands from at least one individual remote control for controlling the single conditional access unit and at least one of the converter chains.

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29. The digital video conversion system of claim 28 wherein the authorized input for enabling the single conditional access unit with respect to demodulated QAM signals from any of the converter chains comprises a single smartcard.

5 30. The digital video conversion system of claim 28 wherein the at least one remote control receiver unit is a single RF remote control receiver responsive to the at least one individual remote control.

10 31. The digital video conversion system of claim 28 further comprising an output, wherein each of the converter chains further includes a decompression unit for receiving one of the decrypted signals from the single conditional access unit, and an RF modulator coupled between the decompression unit and the output.

15 32. The digital video conversion system of claim 28 wherein each chain includes an output to one of a plurality of individual television sets, each converter chain performing the functions of:

tuning to a selected frequency division multiplexed, digitally modulated QAM video signal;

demodulating the selected digitally modulated QAM video signal;

20 providing the demodulated video signal to the single conditional access unit;

decompressing the decrypted signal from the single conditional access unit; and

modulating the decompressed video signal into an analog video signal for viewing on the associated individual television set.

25 33. The digital video conversion system of claim 28 further comprising a main conversion box chassis that houses the splitter, the converter chains, the single conditional access unit and the at least one remote control receiver unit, the tuner and the demodulator of at least one of the converter chains each being housed in individual modular units that can be plugged into the main conversion box chassis.

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34. The digital video conversion system of claim 28 wherein one individual television set is associated with one of the converter chains, the one converter chain performing the functions of:

- 5 signal;
tuning to a selected frequency division multiplexed, digitally modulated QAM video
demodulating the selected digitally modulated QAM video signal;
providing the demodulated video signal to the single conditional access unit; and
outputting the decrypted signal from the single conditional access unit to the one
individual television set.

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35. A digital video conversion system connected to a television signal source, the system comprising:

a splitter connected to the television signal source for simultaneously generating a plurality of copies of television signals received from the television signal source;

15 a plurality of converter chains, each chain connected to receive one of the copies of the television signals and including at least a tuner for tuning to a selected digitally modulated video channel and a demodulator for demodulating digital video data on the selected video channel;

20 a single conditional access unit, connected to the plurality of converter chains and having an authorization input, for decrypting the demodulated digital video data from the plurality of converter chains upon receiving an authorized input through the authorization input and the single conditional access unit individually outputting a plurality of decrypted baseband video signals simultaneously, each decrypted baseband video signal being associated with one of the plurality of converter chains; and

25 at least one remote control receiver unit responsive to commands from at least one individual remote control for controlling the single conditional access unit and at least one of the converter chains.

36. The digital video conversion system of claim 35 wherein the signal source comprises

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an LNB of a satellite antenna and the television signals provided by the television signal source comprise L-band frequency division multiplexed digitally modulated channels.

37. The digital video conversion system of claim 35 wherein the authorized input for enabling the single conditional access unit to decrypt demodulated digital video data comprises a smartcard.

38. The digital video conversion system of claim 35 wherein the at least one remote control receiver unit is a single RF remote control receiver responsive to the at least one individual remote control.

39. The digital video conversion system of claim 35 further comprising an output, wherein each of the converter chains further includes a decompression unit for receiving one of the decrypted baseband video signals from the single conditional access unit, and an RF modulator coupled between the decompression unit and the output.

40. The digital video conversion system of claim 35 wherein one of the converter chains has an associated television set, the one converter chain performing the functions of:
tuning to a selected digitally modulated video channel;
demodulating digital video data on the selected video channel;
providing the demodulated digital video data to the single conditional access unit;
decompressing the decrypted baseband video signal from the single conditional access unit; and
modulating the decompressed baseband video signal into an analog video signal for transmission to the associated individual television set.

41. The digital video conversion system of claim 35 further comprising a main conversion box chassis that houses the splitter, the converter chains, the single conditional access unit and the at least one remote control receiver unit and wherein the tuner and the demodulator of

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at least one of the converter chains are each housed in individual modular units that can be plugged into the main conversion box chassis.

5 42. A digital video conversion system comprising:

an input that receives an input signal;

a plurality of converter chains operatively coupled with the input, each converter chain receiving the input signal, each converter chain including a tuner and a demodulator;
and

10 a conditional access unit coupled to each of the plurality of converter chains, the conditional access unit decrypting at least one demodulated signal received from the at least one of the plurality of converter chains upon receipt of an authorized input.

43. The digital video conversion system as defined by claim 42 further comprising:

15 a remote control receiver unit responsive to commands from an individual remote control, the individual remote control controlling the conditional access unit and at least one of the plurality of converter chains.

44. The digital video conversion system as defined by claim 42 further comprising:

20 a plurality of outputs, each of the plurality of outputs being associated with one of the plurality of converter chains.

45. The digital video conversion system as defined by claim 42 wherein the authorized input comprises a smartcard.

25 46. The digital video conversion system as defined by claim 42 wherein the remote control receiver unit includes a RF remote control receiver that is responsive to the individual remote control.

47. The digital video conversion system as defined by claim 42 wherein each of the

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~~converter chains further includes a decompression unit for receiving decrypted signals from the conditional access unit.~~

48. The digital video conversion system as defined by claim 42 wherein the input signal is a digital signal.

49. The digital video conversion system as defined by claim 42 wherein the input comprises a splitter coupled with each of the converter chains.

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10 50. A digital video conversion system comprising:
a chassis having at least one output that provides a decrypted signal;
a plurality of converter chains, each chain including at least a tuner and a
demodulator;
at least one conditional access unit connected to the plurality of converter chains, the
15 conditional access unit decrypting digital demodulated signals from at least one of the
plurality of converter chains in response to receiving an authorized input; and
at least one remote control receiver responsive to commands from at least one
controller that controls the at least one conditional access unit and at least one of the
converter chains.

20 51. The digital video conversion system of claim 50 wherein the at least one conditional access unit comprises only a single conditional access unit connected to the plurality of converter chains.

25 52. The digital video conversion system of claim 51 wherein the authorized input for enabling the single conditional access unit with respect to demodulated signals from any of the converter chains comprises a single smartcard.

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53. The digital video conversion system of claim 50 wherein each of the converter chains

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~~further includes a decompression unit for receiving decrypted signals from the at least one conditional access unit, and an RF modulator coupled between the decompression unit and one of the outputs.~~

- 5 54. The digital video conversion system of claim 50 wherein the tuner and the demodulator of at least one of the converter chains are each housed in individual modular units that can be plugged into the chassis.

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